sequence that the identified indexing markers are detected comprises counting the number of indicator markers between the first and second indexing markers and the second and third indexing markers.

REMARKS

Claims 1-40 and 42-53 are pending in the present application. In the Office Action of May 31, 2002, the Examiner rejected claims 1, 7-14, 21, 24, and 26-36 under 35 U.S.C. §103(a) as being unpatentable over Krueger (USP5,816,221) in view of Tobinaga et al. (USP 4,895,120). The Examiner allowed claims 15-20, 40 and 42-53 and indicated that claims 2-6, 25, and 37-39 contained allowable subject matter, such indication is appreciated.

The Examiner rejected independent claims 1, 21, and 34 under 35 U.S.C. § 103(a) as being unpatentable over Krueger in view of Tobinaga et al. Although the Examiner did not expressly state how or why the claims were obvious, the Examiner argued that the claims were rejected on a basis of inherency, that is, the prior art "inherently" taught what was purported in the above independent claims. Applicant respectfully disagrees with this assertion.

In order to determine obviousness, through inherency or not, "the test is whether the combine teachings of the prior art, taken as a whole, would have rendered the claimed invention obvious to one of ordinary skill in the art." *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995). However, the prior art cited by the Examiner does

not disclose or give structure to support an obviousness rejection nor does it inherently or implicitly purport to do so.

Claim 1 states that the method entails determining an absolute rotational position of a rotational component and enabling an engine firing sequence upon determining the absolute rotational position. Although it appears that Tobinaga et al. may teach the determination of angular position, it does not teach the determination of absolute rotational position nor the specified use thereafter. Tobinaga et al. states that "the crank angle detector...detects the angular position of the crankshaft by counting the number of pulses generated in the crank angle signal generator after the generation of the pulses from one of the pulser coils." Col. 9, lns. 21-26. Tobinaga et al. further states that "crank position is determined over a range of only 60°-0°." Col. 7, lns. 35-39. Therefore, this is not a means of detecting absolute rotational position, as is currently called for in claim 1, but merely a means of determining angular position of the crankshaft with respect to the pulser coils.

Furthermore, claim 1 states that absolute rotational position is used as a precursor to enabling an engine firing sequence in order to minimize revolutions. Tobinaga et al. does not teach such a use but instead uses rotational position as a means "to synchronize the timing of the ignition signal with the rotation of the crankshaft." Col. 5, lns 56-61.

Further yet, the distinctions do not stop there. Claim 1 specifically calls for enabling an engine firing sequence... to start the engine...; ***then "determining a rotational direction of the component based on continued monitoring of the rotation of***

the component... Tobinaga et al. does not discuss, or suggest, allowing the engine to start, then determining rotational direction. Claim 1 further calls for disabling the engine firing sequence, only after enabling the engine to start and after determining rotational direction, *if it is determined that the engine is in a reverse running direction.* Tobinaga et al. does not disclose, or suggest, this sequence of events. Confirming this interpretation of Tobinaga et al., the Examiner is directed to the explanation provided in Col. 16, lns. 23-43. Initially, it is pointed out that Tobinaga et al. describes this portion of the control as "a reverse *prevention* control." In the description of this "reverse *prevention* control", Tobinaga et al. states that if the correct order of the output pulses P_1 to P_6 from the pulser coils 32 is not correct, "The ignition timing means 30 operates not to transmit the ignition timings for all the cylinders to the ignition signal generating means 31 and effects a misfiring control of the CDI unit 38 in a step (46)." Col. 6, lns. 29-36. The question of whether Tobinaga et al. initially initiates a firing sequence or not is conclusively answered in lines 40-43 in which Tobinaga et al. states "Therefore, according to the reverse prevention control by the controller 29, *it is possible to prevent accidental reversing of the engine* which cannot be perfectly avoided in two-cycle engines." Col. 16, lns. 40-43 (emphasis added). Claim 1 does not "prevent accidental reversing of the engine." Claim 1 actually allows the engine to start, then checks the direction of the engine, and if the direction of the engine is in a reverse direction, claim 1 disables the engine firing sequence. Since Tobinaga et al. is directed toward *preventing* accidental

reversing of the engine, Tobinaga et al. actually teaches away from the present invention which actually allows "accidental" reverse starting of the engine.

Accordingly, Applicant requests reconsideration and allowance of claim 1, and dependent claims 7-14.

Regarding claim 21, Applicant incorporates herein by reference, the relevant remarks set forth with respect to claim 1. Claim 21 includes, among other things, a computer which is operable to determine an absolute rotational position of the rotational components and enable a supply of energizing current to the power device upon determining the absolute rotational position of the component, then determine based on continued monitoring of the rotation of the component after the absolute rotational position of the component has been determined, whether the component is rotating in a forward direction or a reverse direction. Claim 21 further specifically calls for the computer to disable the supply of energizing current to the power device if it is determined that the component is running in the reverse direction. To further clarify and distinguish claim 21, Applicant specifically stated that the determination of an absolute rotational position and the enablement of a supply of energizing current are carried out during a single actuation of the manually powered starter, and that acts of determining direction of the component and disabling the supply of energizing current, if needed, are "carried out after the engine has been allowed to start." Tobinaga et al. does not describe such acts as called for in claim 21. For all the above reasons, it is believed that claims 21-24 and 26-33 define over the references cited and are therefore believed allowable.

For similar reasons, it is believed that claims 34-36 define over Krueger in view of Tobinaga et al. The combination of these references do not teach, or suggest, a means for determining an absolute rotational position of a rotational component . Furthermore, there is no application of absolute rotational position as a precursor to enabling an engine firing sequence during a single operation of the means for driving the rotational component. Further yet, the prior art applied by the Examiner does not teach, or suggest, means for determining a rotational direction of the component based on continued monitoring of the rotation of the component after the absolute rotational position of the component is determined and means for disabling the engine firing sequence if the means for determining the rotational direction of the component determines that the component is running in a reverse direction.

Regarding the rejected dependent claims, in light of the aforementioned remarks distinguishing the independent claims over the art cited by the Examiner, Applicant does not believe additional remarks are necessary and therefore requests a Notice of Allowance for claims 2-6, 25, and 37-39 pursuant to the chain of dependency.

In proofreading the claims, Applicant has found a typographical error in claim 50 and has hereby amended claim 50 to correct the error.

Therefore, in light of the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-40 and 42-53.

Marked-up versions of the amendments made above may be found on pages 9 and 10.

Applicant appreciates the Examiner's consideration of these Remarks and Amendment and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

Timothy J. Ziolkowski
Registration No. 38,368
Direct Dial (414) 227-1204
tjz@cf-law.com

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P.O. ADDRESS:
Cook & Franke S.C.
660 East Mason Street
Milwaukee, WI 53202-3877
(414) 271-5900

50. (Once Amended) A method of starting a two-stroke engine comprising:

(A) manually driving a rotational component of the engine to rotate;

(B) determining ~~a~~an absolute rotational position of the component;

(C) enabling an engine firing sequence upon determining the absolute rotational position of the component; then

(D) determining a rotational direction of the component based on continued monitoring of the rotation of the component; and then

(E) disabling the engine firing sequence if is determined in step (D) that the component is running in a reverse direction;

wherein the step of determining the absolute rotational position of the component comprises detecting rotation of first and second angularly-spaced indexing markers on the component past a detector and identifying the second detected indexing marker and detecting rotation of a third indexing marker on the component past the detector and identifying the third indexing marker and determining a sequence that the identified indexing markers are detected; and

wherein the second indexing marker is located at a first angular spacing α from the first indexing marker and a second angular spacing β from the third indexing marker, wherein α is not equal to β; wherein a plurality of equally-spaced indicator markers are provided on the component, and wherein the step of determining the sequence that the identified indexing markers are detected comprises counting the

number of indicator markers between the first and second indexing markers and the second and third indexing markers.